Contested Development Interventions in the Great Dawuro Walls/*Kati Halala Keela* Heritage Site, Southwest Ethiopia

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Abstract

This paper deals with the heritage and development contestation in the upper Omo valley. The objectives of this paper were to analyze the contestation of the cultural heritage dimension in Gibe III dam's Environmental and Social Impact Assessment (ESIA) and propose a GIS map informed conservation and tourism planning for the great Dawuro defensive dry-stone Walls (*Kati Halala Keela)* at the dam's reservoir-affected sites. This study employed a qualitative approach applied in ethnographic study supplemented with mapping. Data collection methods include fieldwork observation, interview, mapping (GIS), and document review. It reviewed that the state bypassed mitigation measures to rescue heritage at the dam-affected sites. The factors that contributed to that were the state's conception of the Omo River valley as "empty land," vested interest of consultancy firms, uninformed decision-making, inadequate documentation of the heritage, and absence of the heritage site map. This study partly mapped 83.5km of the defense walls along the Gibe III dam reservoir. Today, the heritage is at a crossway that is partly affected by modern hydroelectric dam projects, concurrently promoting emerging tourist sites under *the Gebeta Lehager Koyisha* scheme. Thus, the GIS mapping of the walls assists in planning integrated conservation for heritage sites at the Gibe III dam-affected area.

Keywords: [Dawuro, Gibe-III dam, Halala Keela, GIS mapping, Koyisha]

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1. Introduction

Cultural heritage in the dam-affected area often remains little studied despite a growing literature on dams and the environment in Africa in general and Ethiopia in particular. According to UNESCO (2013:25), two main heritage management approaches are under the sustainable development framework. They are the "material-based conservation" (intrinsic) and values-led conservation (instrumental) approaches. In the *"*material-based conservation*"* approach, heritage professionals engaged in preserving the heritage of the past for the sake of future generations. In the *values*-led conservation approach, a conservation plan is based on values attributed by multi-stakeholders and the cultural significance of heritage to the place and society. It promotes community and value centered conservation. Both approaches see importance of cultural heritage conservation and its transmission to future generation in order to guarantee sustainable development. However, these approaches still do not adequately consider policy issues for conserving heritage at the large-scale dam-induced risk sites in various river valleys worldwide. There were some successful experiences of salvaging cultural heritage from dam impact.

For example, the relocation campaign to salvage Nubian heritage from Aswan High Dam (Hassan 2007 and Kadry 1983) and the relocation of archeological sites from Three Gorges Dam on the Yangtze River in China (Reynolds 2011). However, the friction between large dam projects and equally valued cultural heritage has sparked intense controversies pitting communities against governments (UNESCO 2003).

Impact assessment has been introduced as a policy tool to reduce such controversy. Impact assessment is defined as the "process of identifying the future consequences of a current or proposed action" (Ashraf et al. 2022:1). Thus, impact assessments are dominantly circumscribed under Environmental Impact Assessment (EIA), and Social Impact Assessment (SIA). Since late 1960, EIA was introduced in the USA and is a widely used approach. In 2000, The World Commission on Dams conducted a study on "Dams and Cultural Heritage Management." This study reported that cultural

heritage is one of the marginalized aspects in the dam-affected area and is weakly integrated into EIA/SIA tool.

This study emphasizes how ESIA ineffectively addressed Gibe III-induced impact on the Great Dawuro Defensive Stone Walls/*Kati Halala Keela* (hereafter abbreviated as KHK) and proposes GIS-informed conservation and tourism plans, which is supposed to improve informed decision-making power. Because the walls at the Gibe III dam affected area have not been systematically mapped, their history is told orally. The dams built on the Omo River (Gibe III and *Koyisha* dams) have actual and potential effects on the walls.

Contrariwise, Dawuro society considers *KHK* a "core valued" cultural heritage site. The Dawuro kingdom was one of the fortified kingdoms that built defensive dry-stone walls and ditches between the 16th and 19th centuries (dating needs archaeological studies). The walls were registered as a national cultural heritage site in July 2008. Henceforth, the society demanded its registration under the UNESCO World Heritage list. The walls were dry stone walls built without joining materials. Its height ranges from 2 to 4 meters, and its upper width ranges from 4 to 7 meters. The building architecture of dry-stone walls seemed imitated by teeth structure. The KHK was built with two teeth design *("Halala Keelay la'u achan keeleteda").* It signifies the medieval period human achievement in the upper Omo valley.

The historical significance of KHK should be viewed in connection with the development of humankind in the lower Omo Valley, one of the UNESCO-registered heritage sites. As regards the adequacy and depth of scientific studies on KHK, a few writers (e.g., Wondmu and Mulugeta 2011; Tsadiqu, 2015) described the walls' in sub-topics. These sources are very fragmented. For instance, they estimated the total length of one row of the Wall as ranging from 150km, 175km, 200km, and the sum of 3 to 7 rows of the walls could be more than 1000 km. Tsadiqu (2015) suggests that KHK is a historical-built heritage that could represent humanity. However, these studies did not precisely measure the KHK's length by scientific devices and make sufficient fieldwork study.

Figure 1: Partial view of Great Dawuro Walls/*KHK* (source: Researchers, 2021)

Until now, few studies have been done on the conservation aspects of this heritage. Besides, the site of the walls has not been mapped. Currently, there are no empirical data on the walls' spatial distribution. So, this paper has a policy and methodological contribution to studies of undocumented heritage sites in the Gibe-III dam-affected areas. In the first case, it reviews the policy gaps in impact assessment and trends of valley development in Ethiopia.

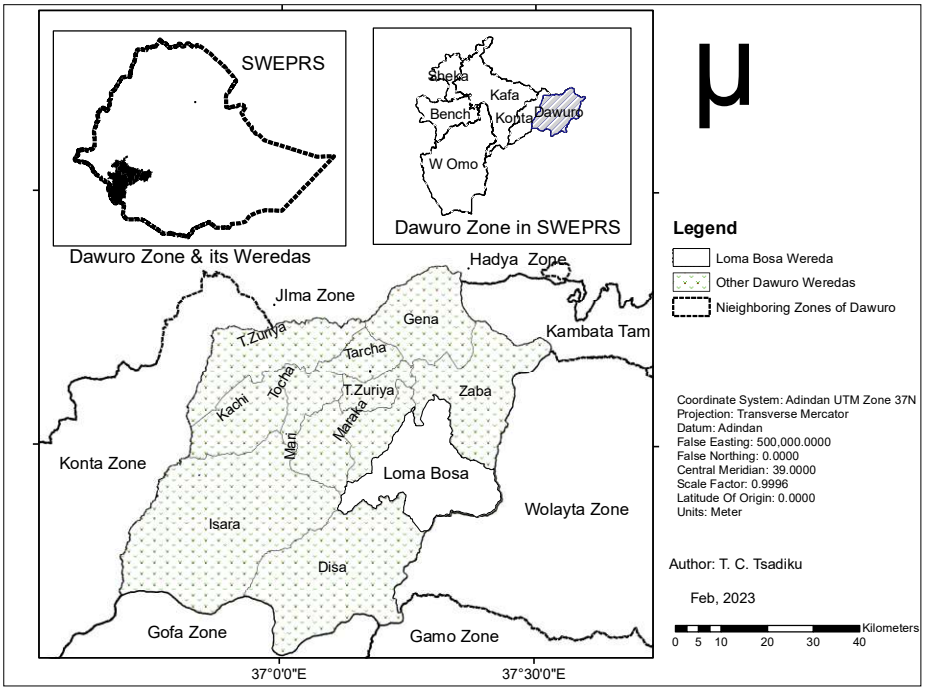
Furthermore, Ethiopia has no separate EIA, SIA, and Cultural Heritage Impact Assessment (CHIA) laws. Instead, all these are seen under EIA (pro 299/2002). ESIA is encumbered with multiple assessment tools (methods & policy). Thereby inadequate concern is set for the cultural heritage aspects. Similarly, the Ethiopian Heritage Authority (pro 209/2000) lacks a cultural heritage law regarding whether the loss of heritage by state development projects is compensated or not.

This paper has two objectives. They are analyzing the contestation of the cultural heritage dimension in Gibe III dam's Environmental and Social Impact Assessment (ESIA) and proposing a GIS map informed conservation and tourism planning for the KHK at eight Gibe III reservoir-affected *Kebeles*.

Research Methods

This study employed an ethnographic (qualitative) approach. It applied a combination of data collection methods, which included fieldwork observations, informant interviews, document reviews, and mapping. Fieldwork was conducted in four phases from 2019 to 2022.[4] Forty-eight informants (elders, women, youth, and expert groups) were interviewed in the first phase. Attributes of KHK, Gibe-III artificial lake, and *Koyisha* tourism project activities were observed. In the subsequent three phases, a mapping survey was carried out using Global Position System (GPS) units to identify the ground position of the walls. Two types of field assistants participated while tracking GPS data on the walls. 1) Twenty-one youth cattle keepers and residents along the walls; 2) Three GPS-trained data collectors (expertise group). Local sources estimated that KHK is located at more than 40 border *Kebeles*. Out of these, the Gibe III reservoir affected area covers 21 *Kebeles* in three *Woredas (Loma Bosa, Zaba Gazo,* and *Gena)* of the Dawuro Zone. Among these, the study purposefully selected eight *Kebeles* in Loma *Woreda (Zima Waruma, Demba Bola, Yalo Worbati, Lala Ambe, Subo Tulama, Gomari Kocho, Apuk' Woyro,* and *Addis Bodari)*. Due to funds and time constraints, 8 *Kebeles* out of 40 were selected. So, this study partially mapped the walls.

[4] Fieldworks: First round: from July to September 2019; second round from March to June 2020; third round from May to June 2021; fourth round: January 2022.



Map 1. The Study Sites (source: Tsadiqu, 2023)

GIS was designed to inform the spatial status of KHK at the reservoir-affected site in two ways: visualizing entire rows of the walls on maps of each *Kebele*'s administrative boundary and walls located in two ESIA-defined impacts zone: under the reservoir (below 893 masl) and the Buffer zone (between 893masl to 1100masl). The walls` spatial data was analyzed by using GIS ArcMap 10.8 software version. Accordingly, to make KHK spatial map, data sources[5] identified and key steps followed are:

Step 1: Identification of spatial/physical attributes of KHK: In this step, researchers defined the purposes of mapping (knowing walls structure, conservation, and tourism). GIS recordable data of physical attributes of walls functional in the defensive system were identified from interviews and observation. [6] These attributes are crossing routes over the Omo River

[5] Sources of Data type for GIS modeling of the heritage site are ASRTER DEM (Advanced Space Born Thermal Emission and Referenced Radiometer), Ethio-GIS Shapefiles, and field survey data with GPS unit on KHK.

[6] It was identified during first-round fieldwork (July to September 2019).

(*Pinuwa)*, ditches, stone walls, gateways, war alarming sites/watching towers, and palace sites. GIS provides the Walls` ground position (line, point, and polygon). Besides, GIS mapping was employed to characterize the spatial features of walls in defensive boundary structures and the landscapes (it laid on) in combination. However, the challenge is that one cannot measure each row's length and locate its spatial assemblage of groups of buildings only from field observation data.

Step 2: Preparing GPS field note form (**Inventory form**). It was developed after two days of GIS training and consultation with professional field assistants (from GIS, tourism, and history and heritage management) in Tarcha, the capital town of Dawuro zone. Hence, the convenient fieldwork seasons were identified, and the GPS data collection inventory forms were duplicated.

Step 3: Walking and GPS tracking: While walking along the walls, the data collector records coordinates by GPS unit when they observe at least one specific physical attribute of the walls and fill on the inventory form.

Step 4: GIS-Digitalizing the Heritage Sites: The KHK points' data collected by GPS were converted into ArcGIS 10.8 Software. Hence, field note data (recorded on inventory form) were filled into the GIS database (attribute table). Descriptions of the walls` specific physical attributes were filled out in the GIS attribute table. Hence, researchers' crosschecked GIS digitalized data (attribute table) with field note data before producing maps.

Step 5: Making KHK line data from the GIS attributes table and checking missed field survey data. While converting the points' data into line data, the attributes of the walls filled on the GIS attribute table were again cross-checked with data recorded on field notes to avoid misplacing the rows of the walls on the ground and the map.

Step 6: Make a spatial Map of the walls' sites and **interpretation** of the heritage sites. Hence, the study mapped 83.5km of the walls (*see Map 2 and Table 1*).

2. Cultural Heritage Dimension of Dams Impact Assessment in Ethiopian Valley Development

In Ethiopia, agencies/authorities concerning valley development have been framed from the top, and inadequate emphasis is paid to the conservation of valley heritage. Historically (Monarchy-*Derg*-EPRDF Regimes), river valleys are conceived as 'unoccupied,' 'underutilized, or 'empty lands' where dams are easily built for national development. Besides, the inhabitants who dwell in the valleys are considered "backward" (Carr 2017:37). Each regime rationalizes the dams' construction with these state perceptions to foster "economic growth," "modernization," and "bringing civilization" (Abbink 2012:141). They had their own politically oriented operational agencies to implement the top-down state development plan. These agencies are renamed and structurally reformed when the regime changes or the state interest in river valleys changes. Nevertheless, their roles seem similar in reducing dam-induced impacts and accounting for local interest. *For instance,* Awash Valley Authority (AVA) in 1962 and the Ethiopian Electric Light and Power Authority (EELPA) in 1956 were formed during the imperial regime. In 1987, *Derg* restructured AVA into Ethiopian Valleys' Development Studies Authorities (EVDSA). Its vital task was running the main river basins for potential power, irrigation developments, and environmental protection (Carr 2017: 28).

In 1993, UK-based global engineering consulting firm Richard Woodroofe and Associates prepared a master plan study of the Gibe-Omo Rivers basin. African Development Bank funded it with $6.4 million (Carr 2017:30). The study indicates that the valley has the potential capacity to construct 23 hydropower dams (Dawit 2010:25). In 1997, EPRDF renamed EELPA as Ethiopian Electric Power Corporation (EEPCO). The then Prime Minster directly supervised it. According to EEPCO (2009:132), five hydroelectric dams were cascaded on the Gibe-Omo Rivers (Gibe I-184mw, Gibe II-420 MW, Gibe III-1870MW, *Koyisha* dam-2160 MW and Gibe V, 560 MW). For the first time, EEPCO was engaged in planning the *Gilgel Gibe I* dam. The distances between Gibe I, Gibe II, Gibe III, and *Koyisha* dams are mentioned as 110km, 155km, and 160km, respectively. Gibe III, constructed between

Dawuro and Wolaita zones, has a vast reservoir. The reservoir occupies 211 km² of surface and backflows of 150km (EEPCO 2009:1).

The government formed other small agencies to support EEPCO that is responsible for regulating environmental and energy issues. These are Ethiopian Electricity Agency (EEA), which reviews EEPCO's policies, specifically tariffs; Environmental Monitoring Agency (EMU), which prepares technical reports; and Environmental Protection Authority (EPA). The EPA was directly responsible to the prime minister's office that manages EIA, approves EIAs, and ensures "participatory environmental management." Under the EPA, Environmental Impact Assessment policy was proclaimed (No. 299/2002) in 2002. Article 4 of this EIA decree (229/2002) considers the project's impact on cultural heritage as one of the "environmental impacts." This created legal and conceptual contestations in distinguishing "cultural heritage" from "nature/environment."

As stated above, if one subsequently looks at the task of agencies/authorities (AVA, EVDSA, EEPCO, EPA) in the three successive regimes, it seems that the cultural heritage dimension was a neglected aspect of valley development. The reviewed literature shows how EIA fails to cognize the dynamics of dams` impact on heritage. As discussed above, the World Commission on a Dam (2000) and similar studies (Campbell 2000; Kiriam et al. 2010; Roders 2013) identified four significant aspects of why the cultural heritage dimension is marginalized in dam's EIA/SIA.

The **first** is **vested interest** in reporting impact assessment (Fisher, 2008). It says EIA/SIA is often prepared on behalf of project proponents who have vested interests. That is, one seeks to get its project approved (government or donor agencies), and the other is a "broker" consultant involved in commissioning. Fisher (2008) criticizes that impact assessment is done by agents/consultant firms of north/western engineers who have a business partnership with project owners, thereby failing to critically inform decision makers for safeguarding local cultural heritage in the affected area**.** He adds that the difficulty of EIA/SIA is its intervention in reporting to avoid highly critical findings. Someone commissioned on behalf of advocacy groups and others by the project partner joint venture in defining the scale and boundaries

of the impacts, willingness to ignore, override or not release unfavorable findings. So, professional reputation could be taken by the leader of an impact team to censor straightforward impact assessment tasks.

The **second** is **cost-benefit analysis**. It is argued that EIA tools better consider cultural heritage sites with current tourism value (economic capital) than unfamiliar cultural heritage sites in project-affected areas (Roders, 2013). In this case, Fisher (2008) and Okpoka (1998) suggested that SIA is seen separately from EIA, thereby SIA is better considered cultural heritage.

The **third** is **cultural heritage impact assessment (CHIA)** is done independently of SIA and EIA because both have weak heritage assessment tools (Ashraf et al. 2022; Campbell 2000; Kiriam et al. 2010; Roders 2013). In this regard, Ashraf et al. (2022:8) developed CHIA procedures.

The **fourth** is the power and interest of individual **actors' informed-decision making ability**. In this regard, Brandt (2000) argues that the success and failure of cultural heritage issues are not having and have not of EIA laws (on both sides of donor and client institutions) but instead attributed to individual power of making informed or uninformed decisions. From his field visit to the *Gilgel Gibe* II dam project in Ethiopia, he discussed that "rules do not matter; rather, it can be at the mercy of project or mission directors who may or may not have a personal interest in cultural heritage. If they do, then the cultural heritage is looked after. If they do not, cultural heritage is ignored and forgotten" (Brandt 2000:35). However, influencing individual actors' power in decision-making issues is very complex. Thus, if one contextualizes the above debates jointly, it shows that specific internal shifts in cultural heritage from EIA/SIA to CHIA and actors' informed decision-making process. Based on the above two assumptions (vested interest and informed decision), this study looks at why the ESIA of Gibe III dam weakly integrated cultural heritage dimensions in Omo valley.

3. Effects of Vested Interest of Gibe-III Dam's ESIA on *KHK*

This section discusses how vested interest in reporting ESIA by the state agents/authority and project consultancy firms contributed to bypassing rescue measures for *KHK* in the Gibe III reservoir-affected area.

The Gibe III dam began in December 2006 without any prior ESIA. *Salini* (*Salini Impregilo,* an Italian-based contractor company) presented a preliminary design in mid-January 2006. In July 2006, EEPCO signed an Engineering Procurement Construction Contract with *Salini*, and the dam commenced in 2006 (Edegilign 2019). During the Gibe III dam preparation, campsite and office buildings were made in the KHK sites, and hence the walls were partly destroyed. Immediately, the local community reported the destruction of the heritage to local officials and project managers. As a result, at the end of 2006, Mid-Day International Consulting Engineers, which conducted ESIA, reported to the Authority for Research and Conservation of Cultural Heritage (ARCCH-now Ethiopian Heritage Authority) about the long defensive stone rampart of *Kati Halala* walls in Dawuro (Hailu, 2007a:399).

From January 28 to February 4/2007, a preliminary archaeological survey and rapid impact assessment were conducted by a team of experts composed of ARCCH and the Mid-Day International Engineers, particularly in the *Zima Waruma Kebele* (Hailu 2007a: 400).

In November 2007, the consultancy firm announced to Dawuro Zone that out of an estimated 175km KHK about 5km of the walls would partially be submerged by the reservoir. It was reported before Archaeological Impact Assessment (AIA). In 2008, Gibe III archaeological project team conducted a fieldwork survey in two phases[7] around the reservoir outpouring areas and adjacent buffer zone[8] (ARCCH 2008:13). This Interim Report of Gibe III AIA submitted to EEPCO states that out of the identified 45 sites, 41 were documented in *Loma* and *Gena Bossa Woredas* of Dawuro Zone. This interim report also concluded that most discovered sites are defensive walls, of which a few sites will be affected by the dam reservoir but withheld a report of the impact in measurable units (in Kilometers or Meters).

Hence, public discussions held between actors involved in the project and

[7] The first phase was October 3-14, 2008, and the second phase was October 15- November 2, 2008.

[8] The reservoir outpouring areas include five zones. These are *Wolaita, Dawuro, Jimma, Hadiya, and Kambata-Tambaro*.

Dawuro zone administrations. For the first time, the Mid-Day International Consultancy Engineers conducted a general discussion with the Dawuro Zone administration at the beginning of January 2009 (it was immediately before the release of the ESIA document). The discussion focused on the Gibe-III project's significance, impacts, and compensation issues. In the debate, the Dawuro Zone officials underlined the historical importance of KHK, which is associated with the people's identity by stating, "the walls were built upon our forefather's bones and blood, and even walking on it is a taboo" (EEPCO 2009, see Appendix Section). This narrative stressed the value of the heritage that the mid-day consultancy overlooked. When the consultancy agent was non-responsive, the Dawuro Zone Administration reported the issue to the House of People's Representatives (HPR) and the ARCCH. As a result**,** a further discussion was held among members of HPR, ARCCH, and the Dawuro Zone Administration at *Tarcha* town in March 2009. As the video documented by the Dawuro Zone government communication office revealed, the disagreement was on how to rescue heritage/compensation (raised by the local government) versus how to conduct AIA to fulfill the project loan criteria. In the discussion, the representative from ARCCH raised that his institution was [9] "urgently obliged to submit a report of rapid cultural heritage impact assessment to the loan offering financial institutions." The representative of ARCCH adds that the historical study team, archeological study team (including GIS & ICT experts), and pre-historic study team had participated in the impact assessment. Besides, he indicated that GIS expertise engaged in AIA. However, it seems that the AIA was methodologically inadequate in predicting the scale of impact and mitigation measures without complete mapping (GIS digital documentation) and defining KHK spatial distribution of each row of the walls in affected areas. For instance, fieldwork it applied was a rapid assessment (1 month) of a larger territory without defining the heritage physical attributes. It also used a GPS unit to collect the walls` point data to identify sites located below and above 893masl. However, each Wall's data were not fully tracked with GPS; rather than 41 sample sites were collected from the accessible area and generalized to predict the likely impact

[9] Video documentation of the meeting recorded by Dawuro Zone government communication affairs 27/7/2000 EC.

at larger reservoir-affected areas. It is important to note that while the AIA points' data of the walls converted into the GIS database and displayed on the map, it misrepresents the walls` spatial information.

In January 2011, another public discussion and Federal government officials` visit to KHK and Gibe III project were jointly held.[10] In the discussion, members of the House Federation Council, Ministry of Water and Energy, Dawuro zone administrator, elders, and project manager participated. As a video documentary recorded by the Dawuro zone, government communication affair shows elders addressed the historical significance of the walls as:[11]

> The 3 to 7 rows of walls were built a long time before. It yet exists as strong and durable. Until now, it is hidden from African and World history. This is because the previous political system oppressed us. These walls are unknown in Ethiopian history. We must appreciate the unique local building architecture that made it durable for about 400 to 500 years. We knew it from an oral story like "a boy conceived when his father went out to build the walls would see his father when he becomes an adolescent and go to the construction site to deliver food as well as to replace his father in the construction of the walls.

This quote indicates two contested messages. The first one is the significance of the walls in Dawuro and human history. The second is political pressure from the top that contributed to its "unseen presence." As to the second context, our informant[12] stated that the walls have the potential to become an exemplary historical heritage site as follows:

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[10] Notes; Kassa Teklebrehan (from the House of Federation Council) and Alemayehu Tegenu (Ministry of Water and Energy) led the state visit. They visited of KHK and Gibe III dam discussion with Dawuro Zone high officials (Israel Ataro) and, the Project Manager (eng. Azeb Asnak), elders (Ato Terefe Gebre) on January 2011.

[11] Notes extracted from the speech of Dawuro elder Teref Gebre to the State Minister's visit to the KHK and Gibe-III dam in January 2011. *Source:* Video documentation from Dawuro Zone Government Affairs, *Tir* 22/2003 EC.

[12] Interview with Ato Temesa Biru, a lawyer in Dawuro Zone Court and former member of the House of Peoples' Representative, Tarcha, August 2019.

> *Kati Halala Keela* is the foundation of Dawuro. It is our legacy and the symbol of our identity. It was built to protect the kingdom from invaders. At the time, Dawuro was a sovereign state. People may not realize that small kingdoms in Africa like Dawuro were able to build defensive walls across their borders in the 16th century. However, this was the reality in Dawuro. It exists as the best exemplary historical heritage site.

Similarly, in the discussion held during the state officials` visit (January 2011), the Dawuro Zone administrator requested the Gibe III project manager for further clarity about the Wall's length submerged under the dam's reservoir, compensation, and support their efforts to register the heritage in the UNESCO world heritage list.[13] The Gibe III dam project manager responded with the following:

> About 5km of *kati Halala* walls will be submerged. However, ESIA conducted a community consultation, and we discussed at the time that the community said, "no problem whatever the walls submerged by the reservoir, but what compensation measures you will plan to replace its lost part matters." According to the community, the walls are not accessible to tourists. So, to make the walls accessible for tourism, we need, first, a tourist access road, and second, support the construction of a cultural hall to conserve cultural assets. In this regard, the community requested support, and we would include these concerns in our management plan.

Thus, when we look at the above quotes, it shows the contestation seen in the shift of claims from compensation to support, and the request for its inscription in the world heritage list was straightforward. The last quote indicates the position of the Gibe III project. That is, providing support (building a tourist access road and cultural hall) and including KHK in future

[13] Extracted from a speech of Dawuro Zone administrator, Ato Esrael Ataro; video sources documented by the Dawuro zone government affair (Tir 22/2003 EC.

project management plan rather than compensation. Consequently, in March 2011, Dawuro Zone officials held a meeting to request compensation in material form (for example, cultural hall) instead of cash.[14]

Thus, the sources of controversy were observed in two ways. The first is predicting the project's impacts on the heritage without complete documentation of KHK heritage sites and controversial reporting. The AIA's reports often say the Gibe III dam's impact on cultural heritage is "insignificant," or there are "no archeological significant heritage sites in the dam affect area" (ARCCH 2008; Hailu 2007b). In 2013, government-owned published sources disclosed misleading information by referring to AIA/ESIA documents. For instance, *Zemen Metshet* (October 2006 E.C:48) stated that the reservoir would flood about 2% of the *Halala* walls. Contrarily, in the same month, the environment and social supervision team leader of the project reported that "175km of *kati Halala* walls is completely free from any possibility of being under the water of an artificial lake, the dam will not pose any effect on the king Halala walls" (The Ethiopian Herald October 13/2013 and 23/2013). Likewise, ethioconstruction.net (the website of a construction company engaged in the construction sector) posted a similar report on its webpage. [15] The preceding pieces of evidence indicate the controversies of vested interests in reporting/misreporting the impact assessment results about the Gibe III-induced impacts on the walls as "5km", "2%," and "completely free," "No archeological significant heritage site."

The second source of controversy is the planning of contested mitigation measures. The ESIA proposed the following mitigation measures for the great walls of Dawuro. First**,** "No direct mitigation measure recommended" because it says only a tiny section of the walls will be flooded (EEPCO 2009:89). Second**,** recognizing the KHK wall sites as a national heritage site (EEPCO 2009: xxi). For the first time, the walls were officially registered as a national cultural heritage on July 10, 2008. The promised packages after its registration were: (a) the construction of an access road along the heritage site to promote tourism *(Zemen Metshet* October 2013:48); (b) to construct

[14] The meeting was conducted on March 07, 2003E.C.
[15] https://ethioconstruction.net/?q=news/gibe-iii-dam-poses-no-effect-king-halala-wall

of a tourist view site for the walls with 1.5 million birr (EEPCO 2009:225). Third**,** "dislodging and keeping the sample of the walls in the culture center" that was proposed by EEPCO and the Minister of Culture and Tourism (The Ethiopian Herald February 2, 2014). Fourth, to conduct research, urgent registration, and complete documentation of the walls sites (through mapping, taking the measurement, photographs, and description) along the dam's flooding section (i.e., ARCCH-institutional perspectives (Hailu 2007b)). Fifth, compensation claims to support the cultural development program (from the community and local officials' point of view). But from the project side (EEPCO), financial assistance was offered for ARCCH and the regional cultural bureau to run AIA, and its registration was taken as compensation (EEPCO 2009:277).

Amidst these contestations, the Gibe III dam was completed in 2016, and the state bypassed any impact mitigation measures. The measures mentioned above prepared by EEPCO were not implemented except for its registration as a national cultural heritage site. Similarly, Edegilign (2019:17) explained the bypass of the state without impact mitigation measures as a backslash of ESIA. In this regard, as Fisher (2008:232) stated, the dilemma is the lack of "integrity" of agent/authority (EEPCO and ARCCH), contractors (*Salini*), and consultancy firms (Mid-day), and did not work as "honest intermediaries." In the case of KHK, the above critique on EIA/SIA vis-à-vis the growing interest in heritage resources shows that ESIA is a weak policy tool to inform decision-makers about dam-induced heritage impacts, its rescue measure, and sustainable tourism plans.

4. Reform and Path to Informed Decision: Inclusion of KHK into *Gebeta Lehager Koyisha* Tourism Project[16]

On April 2, 2018, political reform ensued, and Dr. Abiy Ahmed became the Prime Minister of the Federal Democratic Republic of Ethiopia (FDRE). Following this, *Lakaytuwa (i.e.,* Dawuro's informal youth group) organized public advocacy by using KHK as a symbol of their political movement in

[16] Fortunately, the primary investigator of this study got two opportunities to learn about the *Gebeta Lehager-Konta Koyisha* scheme—first, coincidences of this study area with *Konta Koyisha-Halala Keela* tourist scheme sites. Second, the investigator participated in the Koyisha design team as a social expert in September 2020.

2018. The youth intimidated the government officials during the reform period to handover political responsibility, not to bypass the Gibe III induced KHK heritage loss, which EEPCO sidestepped, and the *Tarcha-Woldehane-Durgi* Road realignment. The youth movements activated frozen heritage issues into political discourse. In this turbulent situation, Dawuro Zone officials publicized that EEPCO deposited 12.8 million Birr to the Dawuro Development Association (DDA) as compensation for the partial loss of KHK in December 2018 (Tsadiqu, 2019). However, our informant[17] said that it was not compensation when compared to the lost heritage resources but the support provided to cover the estimated construction cost of the Dawuro cultural hall that the Gibe III project manager promised. This indicates the emerging post-dam discourse over "support" versus "compensation." Hence, the failure to build a cultural hall and the non-participation of local community representatives in pricing heritage delegitimize the state version of compensation and the local version of support. Rather, it created an opportunity for possible negotiation.

However, on January 20, 2020, on the occasion of the SNNPR community representatives' discussion at the office of the Prime Minister, one of Dawuro elders, Ato Belete Bashu, probed the Prime Minister to visit Dawuro.[18] As a result, on March 8, 2020, Prime Minister Dr. Abiy Ahmed visited Dawuro. During the visit, Dr Abiy discussed with public representatives and visited Dawuro ethnographic museum and the heritage sites. In his public speech, he stressed the potential importance of Dawuro's heritage resources for tourism development. He admitted the submergence of the historical KHK under the Gibe III reservoir in the name of a state development project.[19] On the occasion of his official visit, Dawuro zone officials offered a photo poster of KHK as an honorary gift. This incident contributed to informed decision-making ability and raised Prime minsters` interest in KHK. Hence, the Prime Minster made a landmark decision to make the KHK heritage sites a part of the *Koyisha* tourism project. This reflects the power of informed decision-making. So, on August 16, 2020, the Prime Minister launched *Gebeta*

[17] Interview with Tsadiqu Chachiro September 2019.

[18] See Dawuro elder Ato Belete Bashu's speech to the Prime minister, https://fb.watch/ bWsi UNKbjz/ accessed on 01/ 20/2020.

[19] Sources Ethiopian Press agency/EZA broadcasted on March 8/2020.

*Lehager (*dine for Ethiopia) program to mobilize funds for three international tourism destinations: *Koyisha*, *Wonchi*, and *Gorgora*.

The *Koyisha* project is located in Dawuro and Konta Zones, divided into five clusters. These are *Kati Halala Keela, Gud'umu Boka, Churuchura, Chabara-Amaya,* and *Koyisha*. It is designed to access four potential tourism resources jointly. These are Gibe III dam Reservoir, the KHK, Chabara-Churuchura National Park (CCNP), and Konta *Koyisha* dam Reservoirs. The clustering was based on combining existing tourist capital resources to attract the tourism market from historical, proximity, and accessibility aspects. The above clustering were structured by considering the prospective tourist experiences in the identified locations. For instance, the *Halala keela* cluster is a historical and cultural center; *Gudumu Boka* is a health and well-being center; *Chabara-Amaya* is a wildlife experience center; *Churchura* is an adventure center, and *Koysha* cluster is green and recreation center. *Halala Keela* cluster combined the KHK and the Gibe III reservoir tourist destinies. It was planned as a tourist entrance site. It assumes the tourist entrance starts from the historical KHK site, crosses through *Chabara Churuchura* National Park, and exits at the *Konta Koyisha* dam reservoir.

Hence, shifts on the part of the state on heritage and the KHK are observed in two ways. First**,** a transformation of the cultural capital values of the heritage from "No archeological significant heritage site" (indicated in AIA/ESIA) to an economically significant heritage site. It means its values transfer from cultural capital to economic capital (tourism). This assumption is viewed from a cultural capital perspective (Bourdieu 1986:47) that cultural capital embedded in heritage assets in "objectified form" is transmissible to economic capital in producing goods and tourism services (Throsby 1999:6-7). It seems that the inclusion of KHK in *Koyisha* tourism could imply a shift in the state-development orientation of the Omo valley from 'development without culture' to 'development with culture.' Tourism allows local cultural heritage to be promoted to the broader international community. Accordingly, tourist services such as lodges, asphalt roads, airstrips, boats, recreation centers, research centers, and others have been planned to be built

along KHK.[20] Through these spectacles, the transformation of heritage value is locally recognized as *"Nuu Halala Keela Bay worapee gidope katama Geleda*." It means, "now the history of our *Kati Halala Keela* shifted from forest to center."[21] Locally, "Forest to center" denotes the heritage value transformation regarding power relations between the center and the periphery.

Contrarily, as to our fieldwork data, no rescue measure was carried out to safeguard the walls under reservoir sites, either by the local government or by the Ethiopian Heritage Authority. For instance, in the study *Kebeles*, we observed that 4km of the walls at the reservoir water retreated sites are at high-risk status. Landslides and siltation dismantled the stones of the walls. It requires partial or complete relocation to safe ground after intense documentation. Nevertheless, for now, its safeguarding issues seem to be a silenced topic.

The second way of shift is the quest for equitable heritage conservation claim as revealed in the criticism of PM Dr. Abiy Ahmed on the Ministry of Culture and Tourism (Dr. Hirut Kassaw)[22] hereunder:

> I want you to focus on heritage. *[Kati] Halala Keela* is also a heritage. *Axum* is also a heritage. *Fasilides* [palace building] is also a heritage. *Abba Jiffar* [palace] is also a heritage. If it's a heritage, why do we spend billions of Birr for some of the heritages but not do the same for others? I do not think there is a category of dominant one and sub-ordinate for heritage. Heritage is a heritage. All I need to do is give it fair treatment.

This quote shows the shift of the heritage conservation discourse from the local to the top state authority level that could imply rising informed decision-making towards the heritage in southern Ethiopia. It also indicates the inclusion of local heritage in national heritage discourse in terms of allocating

[20] Interview with Eng. Belay, a contractor of *KHK* lodge, on January 15, 2022.
[21] Interview with Dawuro elders Sankure, Abera, and Gebeyehu, August 2019.
[22] Extracted from PM speech screened on EBC Television on February 22, 2021.

equitable budgets for conservation. Hence, GIS mapping of the KHK sites could support this changing conservation discourse.

5. GIS Mapping of KHK for Informed Conservation Plan: Territorial Cultural System

Conservation needs a theoretical and methodological informed decision. The territorial-cultural system adopted from the conservation discipline benefited this section in examining the missing integration of heritage with its surrounding social and physical landscapes. Rotondo et al. (2016) developed the cultural territorial systems model, which looks at the landscape and cultural heritage as key for sustainable local development plans from three dimensions: culture, territory, and system. The term culture is introduced to the territorial system to credit the role of cultural heritage that accounts for both material and immaterial forms of heritage. The territorial dimension sees the territory as a physical-administrative boundary that operates with certain social rules, norms, and policies. The system "extends the level of complexity and interaction where cultural assets relate to each other and relates to places and population" (Selicato and Piscitelli 2016:77-78). They say, “when both territory and cultural heritage are needed for development, the latter requires an active valuation for its sustainable choices and identity settings.”

In this context, this study identified six main components of the KHK that function in a boundary-defensive "system." These are 1) *Pinuwa* (historical crossing routes on the Gojeb-Omo rivers). *Hatsa Erasha*, chief of water (who provide transportation services on Gojeb-Omo Rivers), controlled the crossing routes. 2) *Kati Halala Keela* (3 to 7 rows of stone walls). 3) *Kati Halala Bokuwa* (*Halala* defensive ditches). 4) *Mista Keela* (Gates’ keeping system). *Mitsa Erasha* (the chief of the gates) and the *Mista keelawu eqancha* (ritual chief of the gates) controlled the gates. 5) *Gommiya* (war alarm drum). 6) *Kati Gad'u*'a (King's palace), which is grouped into main and temporary palaces.[23] Therefore, the *Keela* system includes territorial organization connected to particular social, political, and religious elements (chief of water, chief of the gates, chief of the gates’ ritual father, the kings). In this sense, conservation requires a more comprehensive plan not only cramped to

[23] Interview with Dawuro elder Samaual Sankure, Baza Shota Kebele, August 2019.

the stone walls components but also for specific cultural landscape sites that function in the "defense system," as Rotondo et al. (2016:3-4) stated as the integration of a "small historic center and landscape system." From the cultural territorial dimensions, GIS mapping has methodological benefits in systematical visualizing these KHK sites' integration and hidden attributes of the walls' assemblage in the territorial defensive system.

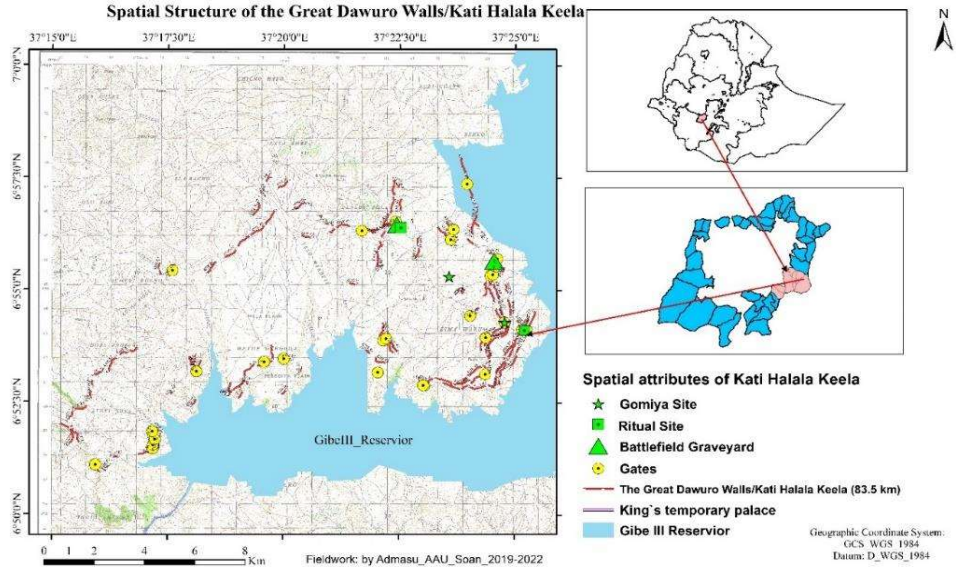
5.1 The Importance of Mapping KHK Heritage Sites with GIS

The KHK is an undocumented heritage site located inside the forest of deep Omo valley. Mapping is a part of digital documentation that brings baseline data of sites and contributes to delegitimizing empty land assumptions. It assists development actors in paying necessary attention to possible rescue measures when any project is planned under heritage-sensitive sites. The principal benefit of mapping is understanding indigenous military boundary defensive systems embodied in the KHK structure.

When the walls are located on a map, the four determinant border landscapes noticeably affect the building structure assemblages. These are *Deriya/Apuwa* (mountains/cliffs), *Shapa* (rivers), *Zoziya* (steep hills), and *Demba* (plane land). The walls often end and restart at mountains (e.g., *Dushi* and *Mashaa* mountains), cliffs (e.g., *Andisona Zoziya*), and river streams. However, if some place is assumed to pass the enemy, the walls are continuously built over a mountain or river. The walls' structures are thick and broad, where the walls continue over the rivers, and drainage is dug in front of the walls to slow down the run-off rivers. On mountains and steep hills, walls built up zigzag and bent straight and downward, according to the landscape. The building structures are stable in such a landscape, and the distances between the rows are shorter.

On the mountains and steep hills, the distances between rows of walls are concise and narrow, whereas, on plane land, the distances between two rows are significantly wider. It means the rows of the walls are sparsely distributed on plane land, whereas in steep hills areas, they are densely distributed. On plane lands, the upper width of the walls is extensive (sometimes extends from 3m to 7m), and the height is short. Because on plane land, the cavalry horse runs faster and can easily step over the walls but to crash, the upper part

of the walls becomes wider. The walls' size is larger on steep hills and mountain areas than on plane lands. Because the cavalry horses run slowly and strictly to jump over the walls on steep hills, its height ranges from 2m to 4m. Narrowing the distance between the rows forces cavalry to run more slowly, taking these topographic advantages. Thus, making the walls closer/sparse distance, lowering/increasing their height, or broadening/narrowing wider are the major observed structures in indigenous military architecture designed against cavalry horse attacks. Therefore, it influenced the distribution of numbers of rows on steep hill/mountain areas than plane land.



Map 2. The spatial map of KHK and the Gibe III Reservoir (source: researchers)

Suppose these four landscapes, namely, plane, hill, mount, and river, exist adjacent at a close distance by converging and diverging the walls'' direction. In that case, the walls'' structures form *Kumbuliya*, a strategic killing site at a plane land. The killing sites were created by diverging the walls so as to split intruded mass warriors. In the directions, the warriors march inward, the walls'' structures separate from each other, and their numbers become smaller. Finally, warriors unknowingly reach the designed battlefield, for

instance, that space yet recalled *"Olla Bach"*[24] marked with a tree named *Boroda Madu Kumbuliya Mokosta*, located at *Boroda Madu* gate. A converging structure intended to gather intruded warriors into the killing site.[25]

Besides, the gates, war-alarming drum, enemy watching tower sites are located over a high cliff and mountain landscapes (e.g., *Masha, Kekeria*, and *Awajuwa zoziya* mountains). Caves and underground trenches are located around river streams. The gates are usually located on the top of steep hills and nearby cliffs/mountains in a complex landscape, making it impossible to cross in other directions. Therefore, GIS mapping benefited this study in digital documentation (GIS database) of the main component of KHK, such as 83.5km long rows of walls, 27gates" sites, 2 war drum alarming/ritual sites, 1 temporary king's palace, other crucial cultural landscape sites that are located in the study areas.

5.2 Conservation Map of KHK at the Local *Kebele* Level

Locating the walls by GIS means digitalizing heritage sites. So, it suggests that policymakers, conservationists, and local leaders take informed preventive or intervention measures for the walls under the reservoir, buffer zone, and settlement areas. The GIS modeled the spatial structures of each row of the walls at each *kebele* administrative boundary. It measures the number and lengths of each row of the walls. Data regarding the walls" spatial distribution and endangered heritage sites, which require immediate conservation, were digitally recorded in the GIS database. It benefits planning participatory conservation in terms of budgeting (clean trees and grasses grow up on the walls, maintenance walls and local architectural knowledge), mobilizing resources, and participating in the community in a small group. In the future, the GIS map contributes to planning the conservation and determining the required amount of labor forces, time, and expected work activities per km. In this context, the conservation map of the KHK (*see map*

[24] *Olla Bacho* was a battlefield site located at *Baroda Madu* Gate, in *Demba Bola*

[25] This structure is observed around *Darmisa* Gate, on which the 3rd, 4th, and 5th rows are connected with mountains *Andiso Zoziya*, *Kekeria*, and *Dushi. Today, Koyisha-Kati Halala Keela cluste*r schemed on this site.

3) which separately shows the distribution and length of the entire walls in 8 study *Kebeles* was displayed in the table below.

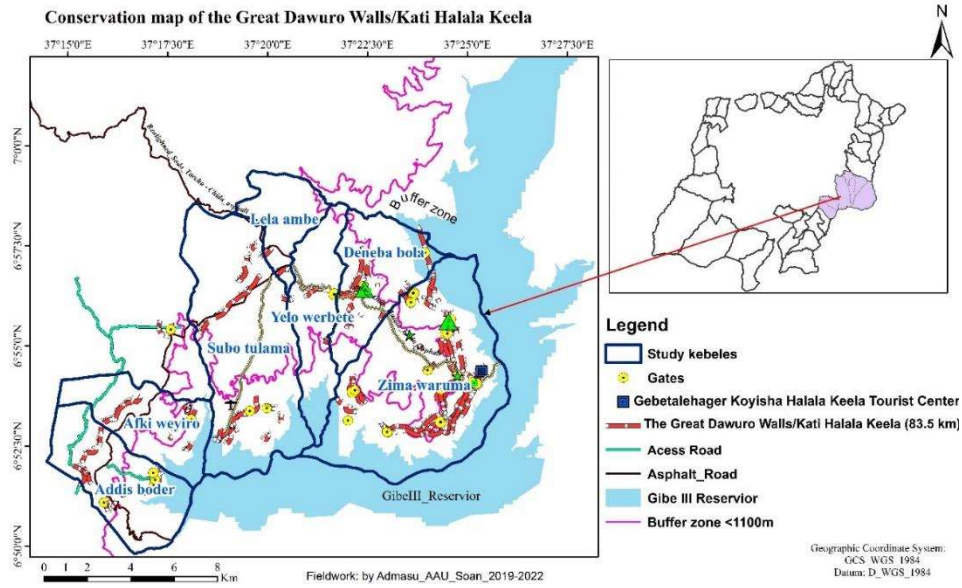
Table 1: The Distribution of KHK in the Study *Kebeles* (source: researchers)

S. No	KHK located *Kebeles*	Length of each row KHK (km)							
		Row1	Row2	Row3	Row4	Row5	Row6	Row7	Total
1	ZimaWaruma	6.472	7.36	10.32	9.14	4.82	2.46	1.097	41.669
2	Demba Bola	1.977	0.282	0.258	1.44	3.266	1.546	2.911	11.68
3	Subo Tulama	1.982	3.572	4.105	1.65				11.309
4	Addis Bodari	1.11	2.75	2.875	1.58				8.315
5	Apuk'i Woyro	0.425	0.874	1.24	2.45				4.989
6	Yalo Worbat	0.439	1.688	0.84					2.967
7	Gomari Kocho		0.62	0.631					1.251
8	Lala Ambe		0.84	0.493					1.333
	Total	12.405	17.986	20.762	16.26	8.086	4.006	4.008	**83.513**

The length of the 3 to 7 rows of the walls of the study sites is 83.5km long out of the estimated 1000km of all the walls in Dawuro territory. Forty-one point seven km (41.7km) of KHK is located in *Zima Waruma Kebele* (*Halala Keela-Koyisha Gebeta Lehager* project is also located in this *Kebele*). *Lala Ambe* is the least KHK-distributed *kebele*, with only 1.33km. The above spatial data of the walls were calculated from the GIS systematically documented evidence. It could benefit local *kebeles"* leaders to realize the walls" existence on their respective administrative boundaries. Thereby, it could help them to plan for local intervention measures against the dangers caused by the local communities. As Selicato and Piscitelli (2016) said, territorial cultural system helps the decision makers to actively evaluate the physical significance of heritage sites and design alternative measures if both territory and the walls are needed for development. In this regard, the lack of sufficient documented information about the heritage sites partly contributed to development-induced endangerments.

5.3 Mapping KHK at Development-Induced Risk Sites

According to the ESIA document of Gibe III, the areas located below 893masl are submerged under the reservoir. Again, the areas between 893 masl and 1100 masl are restricted as buffer zones (EEPCO 2009). As discussed earlier, the documents of ESIA/AIA are controversial [26] in that they did not mention the walls` statues at these planned sites. However, this study comprehensively mapped the heritage sites in the dam-affected areas from four aspects. They are road realignment, buffer zone, reservoir, and *Halala Keela* tourist lodge site of the *Koyisha Gebeta Lehager* project.



Map 3: Development Intervention of KHK Sites (source: researchers)

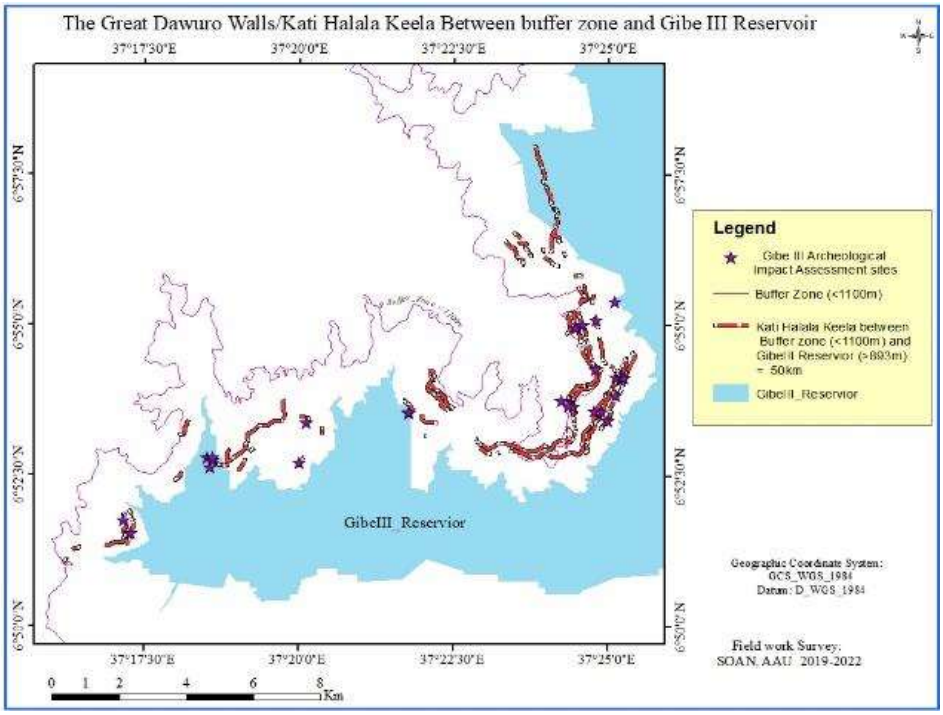
1) **Road Realignment**: As shown on map 3, from 1997 to 2022, for the construction of roads (access and asphalt) and a realignment of the *Sodo-Tarcha-Chida* road after the Gibe III reservoir, the walls were cut down at 21 sites without any compensation or relocation measures.

2) **The Walls in Buffer Zone**: As shown in table 1, map 3, and map 4, out of 83.5km of the walls, 50km are located in a buffer zone. This puts its

[26] See https://ethioconstruction.net.

conservation in a challenging position if access restriction is applied in the future. Again, this implies the need for heritage-environment integrated conservation measures and the inclusion of KHK in the plan of Gibe III reservoir watershed management.

3) **Partially Submerged under Gibe III Reservoir**: Regarding the size of the walls submerged under the reservoir, our findings disagree with the 5km report of ESIA/AIA. This study compared the AIA document (37 points collected from KHK sites, marked with a star on map 4 below) with a GPS-based fieldwork survey from 8 *kebeles* out of 21 Gibe III reservoir-affected *kebeles* and found that 4km walls were submerged under the reservoir.



Map 4: KHK Sites under the Reservoir and Buffer Zone (source: researchers)

Figure 2*:* KHK at the Reservoir Retreated Sites (source: researchers)

However, this figure does not imply the entire submerged walls in the study *kebeles.* Instead, it reflects only the GPS-recorded part of the walls visible when the reservoir retreats in the dry season. It means the wall sites covered under the water were not recorded, even in the study sites. As AIA points data show (star-mark on map 4), there are walls under the reservoir, which is not addressed in this research. This implies that if the entire walls along the reservoir were mapped, more extended parts of the walls would exist under the reservoir but were not documented before. The first row of the walls is the most affected wall covered under the reservoir. As shown in Table 1 and map 4, out of the 12.405km long of the first row in the study areas, the Gibe III reservoir submerged 4km of the walls. The finding of this study also implies (agreeing with the AIA report) that the submerged parts of the walls are minimum compared to the remaining Walls. However, it disagrees with the government sources reported in *Zemen Metshet* (October 2006E.C: 48), The Ethiopian Herald (October 13 and 23/2013), and ethioconstruction.net, which say, "wall is completely free from any possibility of being under the water of the artificial lake." In contrast, according to fieldwork observation, at *Zima-Waruma, Subo-Tulama,* and *Demba-Bola kebeles*, the first row of the walls submerged underwater was observed when the water retreats (*see*

figure 2 and *map 4*).[27] Moreover, land sliding along the reservoir causes spontaneous destruction to the walls. Due to the reservoir's back-and-forth retreat, the landscape continually slid down during the rainy seasons. Hence, the walls close to or inside the reservoir have been dismantled.[28]

In this study, the application of GIS mapping of KHK at reservoir retreat sites is to imply relocation measures for the heritage at high-risk sites to the safe ground after intensive documentation. Relocation (partial/complete) is a widely used approach to rescuing heritage sites in dam reservoir-affected areas. For instance, it was applied in China (1997) to rescue the archeological and cultural heritage sites of Yangtze River from the Three Gorges dam (Reynolds 2011; D'emattee 2012) and in Egypt (1960-1971) to rescue the Nubian heritage site from Aswan dam (Hassan 2007; Kadry 1983).

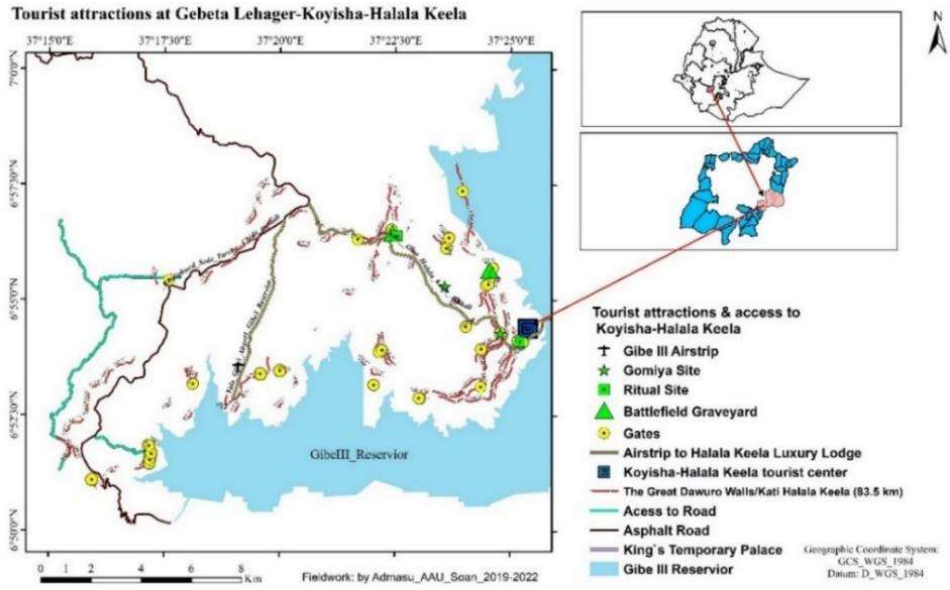
5.4. Local Tour Guide Map of *Koyisha-Halala Keela* Cluster

Today, a GIS map is a widely used tool to plan tour guides (using a smartphone or computer) and assist tourists in walking (hiking or riding) and viewing specific attraction sites. Currently, the government is constructing tourist infrastructures (roads, lodges, etc.) and promoting specific tourist attractions at five clusters of *Koyisha* which are not been identified before. Mapping tourist attractions at all *Koyisha* clusters could be important, but it needs intensive fieldwork, funding, and time. So, this study only focused on *Halala keela* cluster. In this context, this study visualizes three elements in combination to design a local tour guide map. They are tourist access (lodges, roads, boats, airstrip, and recreation centers) under construction, Gibe III reservoir as a tourist attraction and its pathways, and the KHK and its related specific sites as tourist attractions (graveyards, ancient battlefield, ritual mountains, war drum alarming sites, gates sites, underground fortress system, temporary kings" palaces). Thus, the main tourist attractions (KHK and Gibe III Reservoir) are mapped with the proposed tourist access. This study

[27] The principal investigator observed these sites at *Suwaluwa* (in *Zima Waruma Kebele*), *Shirgmi* (in *Subo-Tulama Kebele*), and *DunkinaDema-Bork'uwa*a (in *Demba Bola Kebele*).

[28] The principal investigator observed these sliding sites at ***Geleshi*** River, *Dorqa* sites (in *Zima Waruma Kebele*), *Koriya Demba* (in *Apuki-Woyiro Kebele*), *Borquwa*, and *Koma* (in *Demba Bola Kebele*)

digitally recorded tourist attractions in the GIS database and mapped local travel routes.



Map 5: Local Tour Guide Map for *Kati Halala Keela* cluster (source: researchers)

The above map 5 helps to plan a local tour at the *Halala Keela* cluster. Besides, local travel routes connect tourists to experience indigenous military spatial knowledge, depicted in the KHK boundary defensive structures. This allows the local community to be involved in assisting tourists in terms of reducing tourist-host conflicts and visitors" cultural shocks.

Conclusion

The cultural heritage dimension was inadequately integrated into the ESIA of the Gibe III dam project, and its mitigation measure was bypassed. It reviewed vested interest and uninformed decisions in ESIA/AIA of Gibe III dam contributed to bypassing dam-induced impact mitigation measures for the KHK sites. Development intervention on cultural heritage sites without proper compensation measures resulted in local contestations. This led to the shift of internal debate on the cultural heritage dimension from ESIA to CHIA and informed decision-making.

Based on the definition given to cultural heritage in the 1972 UNESCO Convention, this study defines the Great Dawuro defensive stone walls (KHK) as a "group of buildings" and "site," which includes six major components of a boundary defensive system. These are historical crossing routes, dry stone walls, trenches, gatekeeping systems, war alarming systems (watching towers), and the king's palaces. These complex walls" structures are comprehensively visualized by using the GIS mapping method.

This paper has the policy and methodological contributions to heritage and tourism studies in the dam reservoir-affected valley. In the case of Dawuro, the contestation between development and cultural heritage could be seen from three angles. They are urging value-based heritage safeguarding beyond vested interest groups (local community concern). Second, institutional engagement of heritage authority in full filling international financial institutions" loan criteria to access loans for the development project (e.g., Gibe III ESIA/AIA) versus assisting local claim of KHK inscription in UNESCO world heritage list. Third, promoting the KHK sites for responsible tourism under *Koyisha Gebeta Lehager* Project in the post dam period. In this case, GIS digital method is essential for spatial analysis of heritage sites and for making GIS-informed decisions to plan alternative conservation measures for heritage at the high-risk site along the dam-affected areas. It benefits conservation and development agents, authorities, consultants, and contractors in planning improved conservation measures. Possible policy suggestions of the GIS model of buffering heritage sites situated in the settlement areas on private/communal lands should be imperative. However, it would consider buffering to sustainably utilize the shared resources rather than cushioning to protect the community from common resources. Lastly, researchers, conservationists, or experts on impact assessment can follow similar approaches to study the remaining KHK heritage sites located at potential Gibe III dam and *Koyisha* dam-affected areas of Omo Valley.

References

Tsadiqu Chachiro (2015). የዳዉሮ ብሔር ታሪክና ባህል (*YeDawuro Biher Tarikna Bahil* (in mharic)). Addis Ababa: Alpha Printing Press.

Tsadiqu Chachiro (2019), በዳዉሮ ሕልዉና በታርጫ-ዱሪጊ-ዱራሜ መንገድ የስሞናዊያን ሴራዎችና የተጠቂዎች ትግል *(Bedawuro Hiliwunana Betarcha-Durgi-Durame Menged Yesemionawiyan serawochina Yeteteqiwoch Tigil* (in mharic)).

Wondimu Lemma and Mulugeta Bezabih (2011). የዳዉሮ ታሪክ እስከ 1983 (*Yedawuro Tarik Eske 1983*). Addis Ababa: Far East Printing Press.

Zemen Metshet, (2006 EC). የጊቤ 3 ትሩፋቶች (*Yegibe 3 tirufatoch). No. 53. 48-49.*

Abbink, J. (2012). Dam Controversies: Contested Governance and Developmental Discourse on the Ethiopian Omo River. *Social Anthropology /Anthropologie Sociale 20* (2), pp. 125–144. DOI: 10.1111/j.1469-8676.2012.00196.x

Admasu Abebe (2014). The origin, significance, and physical condition of the Great Medieval Defensive dry Stone Walls of Dawuro/Kati Halala Keela, Southwest Ethiopia. *ERJSSH (1),* p. 17-39.

African Development Bank (2015). *Safeguards and Sustainability Series: Integrated Safeguards System Guidance Materials 2(1)*. www.afdb.org.

Ashraf, B., Neugebauer, C. and Kloos, M. (2022). A Conceptual Framework for Heritage Impact Assessment: A Review and Perspective. *Sustainability,* 14/27, p.1-15. **https://doi.org/10.3390/su14010027.**

ARCCH (2008). *Interim Report Gibe III Archaeological Project, Prepared for EEPCO (unpublished manuscript)*

Bourdieu, P. (1986). The Forms of Capital. In (edited by Richardson, J.): *Handbook of Theory and Research for the Sociology of Education.* New York: Greenwood Press, p. 241-258.

Brandt, S. (2000). *A Tale of two World Bank-Financed Dam Projects in the Horn of Africa. In* (editors Brandt, S. and Hassan, F.): *World Commission on Dams: Working Paper "Dams and Cultural heritage. http://www.dams.org.*

Campbell, I. (2000). Environmental Impact Assessment, Cultural Heritage and Dams in Eastern Africa. In (editors Brandt, S. and Hassan, F.): *World*

*Commission on Dams: Dams and Cultural heritage. Working Paper.*p. 39-43.

Carr, C. (2017). *River Basin Development and Human Rights in Eastern Africa-A Policy Crossroads.* Gewerbestrass: Springer International Publishing AG.

Dawit, H. (2010). *'Ethiopian Energy Systems: Potentials, Opportunities, and Sustainable Utilization.' MSC thesis in Sustainable development.* Uppsala University, Sweden.

Dawuro Zone (2009): Cultural Development of Dawuro People`s Program (2008-2013). (*Unpublished manuscript)*.

D`ematte, P. (2012). After the Flood: Cultural Heritage and Cultural Politics in Chongqing Municipality and the Three Gorges Areas, China: *Journal of Historic Preservation, History, Theory, and Criticism, 9 (1),* p. 49-64.

Edegilign Hailu (2019). *The politics and materiality of a developmental state in the EPRDF's Ethiopia: A view from the Gibe III hydropower development project.* Doctorat de Géographie humaine, l'Université Paris Nanterre.

EEPCO (2009). *Gibe III hydroelectric Project; Environmental and Social Impact Assessment.*

Fisher, R. (2008). Anthropologists and Social Impact Assessment: Negotiating the Ethical Minefield. *The Asian Journal of Anthropology, 9(3),* p. 231-242. https://doi.org/10.1080/14442210802251670

Hailu Zeleke (2007a). Some Notes on the Great Walls of Wolayta and Dawuro. *Annales d`E`thiopie, 23,* p.399-412. DOI:10.3406/ethio.2007.1514

Hailu Zeleke (2007b). *A Rapid Archaeological Impact Assessment in Wolayta and Dawuro Zones, Along Omo River: (Unpublished report)*.

Hassan, F. (2007). The Aswan High Dam and the International Rescue Nubia Campaign. *Afr Archaeol Rev, 24,* p. 73-94.

Kadry, A. (1983). Salvaging Egypt's Nubian Monuments World Heritage. *Ambio, 12 (3/4),* p. 206-209.

Kiriam, H., Odiaua, I., and Sinamai. A. (2010). *Impact Assessment and Heritage Management in Africa: An overview.* Mombasa: Centre for Heritage Development in Africa.

Okpoka, P. (1998). The Necessity for Anthropological Forum on Environmental Impacts Assessment. *Research review, 14 (2),* p. 33-41.

Reynolds, I. (2011). Impact of the Three Gorges Dam. *JCCC Honors Journal, 2 (2/3),* p. 1-23.

Roberts, L. (2016). Deep Mapping and Spatial Anthropology. *Humanities, 5 (5),* p. 1-7. **https://doi.org/10.3390/h5010005.**

Roders, A. P. (2013). *Monitoring cultural Significance and Impact Assessments. IAIA13 Conference Proceedings' Impact Assessment the Next Generation 33rd Annual Meeting of the International Association for Impact Assessment 13 – 16 May 2013.* Calgary, Calgary Stampede BMO Centre.

Rotondo, F. Selicato, v. Marin and J. Galdeano, (editors 2016). *Cultural Territorial Systems. Landscape and Cultural Heritage as a Key to Sustainable and Local Development in Eastern Europe.* Switzerland: Springer Publishing. DOI: 10.5772/intechopen.91985.

Selicato, F. and Piscitelli, C. (2016). Territorial Cultural Systems: Possible Definitions. In: F. Rotondo, F. Selicato, V. Marin and J. Galdeano (Eds), *Cultural Territorial Systems. Landscape and Cultural Heritage as a key to Sustainable and Local Development in Eastern Europe.* Switzerland: Springer Publishing, p. 75-84.

The Ethiopian Herald, (October 13/2013). *"Gibe III Dam poses no effect on the king Halala Wall".* Addis Ababa: Ethiopian Press Agency.

Throsby, D. (1999). Cultural Capital. *Journal of Cultural Economics, 23 (1/2),* p. 3-12. DOI: 10.1023/A: 1007543313370

UNESCO (2013). *Managing Cultural World Heritage. World Heritage Resource Manual.* Paris.

World Commission on Dams (2000). *Working Paper "Dams and Cultural Heritage".* World Commission on the Dam. http://www.dams.org.

World Bank, (2006). *Replaced (OP 4.11) cultural property into "Physical Cultural Resources.* http://go.worldbank.org/M8RCJICIB0.